

COMPLEX STUDY OF INTROSCOPIC AND GROWTH INDEXES OF SEEDS SMALL PARTIES FORMED BY ELECTROSTATIC SEPARATION

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The paper presents the results of a comparative study of small parties of spring soft wheat and spring barley seeds formed by the method of electrostatic separation. Traditional methods for estimating growth indices, methods of morphometric and densitometric analysis of X-ray patterns of seeds, and the method of gas-discharge visualization were used to compare the obtained fractions. It has been established that according to a number of standard quality indicators (germination capacity - for barley, weight of 1000 seeds - for wheat and barley), the fraction number 2 was the most optimal. The seeds of this fraction were characterized by the maximum values of the 1000 seeds mass. The results of densitometric analysis of X-ray seeds' patterns showed that they were also the most coriaceous (the highest index of average brightness). Based on the high values of size and density, it can be assumed that the seeds of this fraction have the best sowing qualities, which was confirmed by their highest germination capacity. It was found that the standard indicator «emergency rate», the parameter «average intensity of a gas discharge images» (brightness unit) and the entropy of a gas-discharge images (relative units) are positively connected. The received results demonstrate that introspective techniques of the seed quality evaluation can be successfully used to study the efficiency of electrostatic separation of seeds.

Key words: electrostatic separation of seeds, microfocus X-ray, gas-discharge visualization, sowing qualities of seeds, cereal seeds.

